

AUSTRALIAN JOURNAL OF CHEMISTRY

632
6

VOLUME 15

MELBOURNE
1962

AUSTRALIAN JOURNAL OF CHEMISTRY

Published by the Commonwealth Scientific and Industrial Research Organization. Volumes 1 to 5 of the Australian Journal of Physics and the Australian Journal of Chemistry issued as the Australian Journal of Scientific Research, Series A: Physical Sciences. Issued quarterly, £2 per annum.

BOARD OF STANDARDS

The Board of Standards for this Journal is appointed by the Commonwealth Scientific and Industrial Research Organization and the Australian Academy of Science and consists of Professor Sir Macfarlane Burnet (Chairman), Dr. N. S. Noble (Editor), Professor N. S. Bayliss, Dr. J. L. Pawsey, Professor W. P. Rogers, and Professor J. S. Turner.

ADVISORY COMMITTEE

Acceptance of papers for this Journal is in the hands of an Advisory Committee appointed by the Board of Standards in consultation with the Royal Australian Chemical Institute and consisting of Dr. N. S. Noble (Chairman and Editor), Professor G. M. Badger, Professor N. S. Bayliss, Professor R. D. Brown, Professor A. N. Hambly, Professor R. J. W. Le Fèvre, and Dr. J. R. Price.



All enquiries and manuscripts should be forwarded to :

The Editor,
Australian Journal of Chemistry,
Commonwealth Scientific and Industrial Research Organization,
314 Albert Street, East Melbourne, C.2, Victoria

MELBOURNE

CONTENTS

NUMBER 1, FEBRUARY 1962

	PAGE
Volume Changes on Mixing. I. Alcohol + Benzene Solutions. By I. Brown and F. Smith	1
Volume Changes on Mixing. II. Systems Containing Acetone, Acetonitrile, and Nitromethane. By I. Brown and F. Smith	9
The Reversible A.C. Polarographic Wave at Larger Amplitudes of the Alternating Voltage. By H. H. Bauer	13
Evaluation of the Effect of Some Experimental Parameters in the Determination of Chlorine Nuclear Quadrupole Resonance Spectra. By S. Hacobian	21
Cathode Ray Oscillography in A.C. Polarography and Tensammetry. By T. Biegler	34
The Kinetics of the Reduction of Lead Monoxide by Hydrogen. By R. V. Culver, I. G. Matthew, and E. C. R. Spooner	40
Deuterium Exchange Reactions with Substituted Aromatics. III. Heterocyclics and Polycyclic Hydrocarbons. By J. L. Garnett and W. A. Sollich	56
Electrochemical Studies on Eriochrome Violet B and Its Lanthanide Complexes. I. Behaviour of Eriochrome Violet B and Its Lanthanide Complexes at the Dropping Mercury Electrode: D.C., A.C., and Cathode Ray Polarography. By T. M. Florence and G. H. Aylward..	65
The Interaction of Azo-dyes with Proteins. I. Binding of Dyes with Hydroxyl and Sulphonate Substituents to Bovine Serum Albumin. By W. F. Forbes, B. S. Harrap, and B. Milligan	82
The Pyrolysis of $\omega\omega'$ -Diphenylalkanes. By J. W. Sweeting and J. F. K. Wilshire	89
Amino Acids and Peptides. VIII. The Synthesis and Some Properties of L-Cystine Diamide. By I. W. Stapleton and J. M. Swan	106
A Procedure for the Absolute Identification of Anthocyanins: The Pigments of Blackcurrant Fruit. By B. V. Chandler and K. A. Harper. . . .	114
Alkaloids of <i>Crotalaria trifoliastrum</i> Willd. and <i>C. aridicola</i> Domin. I. Methyl Ethers of Supinidine and Retronecine. By C. C. J. Culvenor and L. W. Smith	121
Alkaloids of the Australian Apocynaceae: <i>Kopsia longiflora</i> Merr. III. Preliminary Degradation of the Alkaloids. By W. D. Crow and M. Michael	130

NUMBER 1, FEBRUARY 1962 (*Continued*)

	PAGE
Alkaloids of <i>Cynoglossum latifolium</i> R.Br. Latifoline and 7-Angelyl-retronecine. By H. C. Crowley and C. C. J. Culvenor	139
New Sources and Synthesis of Torquatone. By R. C. Bowyer and P. R. Jefferies	145
<i>Short Communications</i>	
The Infrared Spectra of Bispyridinium Oximes. By J. Tregellas-Williams	150
The Stability Constants of Mono- and Bis(thenoyltrifluoroacetato)-beryllium. By H. J. de Bruin and R. B. Temple	153
Occurrence of Maaliol, Elemol, and Globulol in Some Australian Essential Oils. By R. O. Hellyer	157
<i>Senecio magnificus</i> F. Muell., A Source of Senecionine. By C. C. J. Culvenor	158
Alkaloids of the Gramineae: <i>Thelepogon elegans</i> . By W. D. Crow ..	159
The Stereochemistry of Lirioresinol-B. By E. N. Maslen, C. Nockolds, and M. Paton	161
The Characterization of some Unsaturated Aldehydes in Microgram Quantities. By D. A. Forss, E. A. Dunstone, J. F. Horwood, and W. Stark	163
Physiological Forms of <i>Backhousia angustifolia</i> F. Muell. By J. R. Cannon and Nanette H. Corbett	168
Volatile Constituents of the Bronze Orange Bug, <i>Rhoecocoris sulciventris</i> . By R. J. Park and M. D. Sutherland	172

NUMBER 2, MAY 1962

	PAGE
The Interaction of Various Ligands with Halogen-Bridged Anionic Complexes of Bivalent Platinum and Palladium. By S. E. Livingstone and Alice Whitley	175
Kinetics of the Reaction between Silver and Nitric Acid. By J. J. Batten	181
Virial Coefficients of Three Organic Sulphides. By G. A. Bottomley and I. H. Coopes	190
The "Anomalous" Association of Thallous Salts in Aqueous Solution. By M. H. Panckhurst	194
The Catalytic Decomposition of Hydrogen Peroxide Solutions by Single Crystals of Silver. By J. Bagg	201
Kinetics of the Decomposition of Sulphur Dicyanide in Aqueous Solution. By W. Kitching, R. H. Smith, and I. R. Wilson	211
Solvent Extraction of Mono(salicylato)beryllium, and the pH Titration of the System Beryllium-Salicylic Acid. By H. J. de Bruin, D. Kairaitis, and L. Szego	218
The Preparation and Resolution of the Bis(oxalato)-2,2'-bipyridine-chromate(III) and Bis(oxalato)-1,10-phenanthrolinechromate(III) Ions, By J. A. Broomhead	228
Some Studies in Inorganic Complexes. XIII. Chromium(III) and Molybdenum(III) with 2-Aminomethylpyridine (2-Picolylamine). By G. J. Sutton	232
Coordination Compounds of Substituted 1,10-Phenanthrolines and Related Dipyrityls. II. Complexes of Iron and 2,9-Dimethyl-1,10-phenanthroline. By D. B. Fox, J. R. Hall, and R. A. Plowman	235
Studies on Sulphamic Acid and Related Compounds. I. Kinetics and Mechanism of Hydrolysis of Sulphamic Acid. By B. E. Fleischfresser and I. Lauder	242
Studies on Sulphamic Acid and Related Compounds. II. Kinetics and Mechanism of Hydrolysis of Trimethylamine- and of Triethylamine Sulphur Trioxide Addition Compounds. By B. E. Fleischfresser and I. Lauder	251
A Study of the Thorpe-Ingold Effect: The Reaction of Potassium Hydroxide with a Lactone of Ethyl α -Bromo- α' -hydroxy-1,1-cyclohexane Diacetate. By H. O. Larson and Gaylien S. K. Sung	261
Studies in Mass Spectrometry. I. Structures and Reactions of Ions from Benzyl Alcohol, <i>ortho</i> -, <i>meta</i> -, and <i>para</i> -Hydroxybenzyl Alcohols, and their <i>O</i> -Deuterated Derivatives. By J. S. Shannon	265

NUMBER 2, MAY 1962 (Continued)

	PAGE
Charge-Transfer Complexes of Brominated Polycyclic Aromatic Hydrocarbons. By T. McL. Spotswood	278
Stereochemistry of Cyclohexane Derivatives. VIII. Structures of Some <i>p</i> -Menth-1-ene-3,6-diols. By A. Blumann, E. W. Della, C. A. Henrick, J. Hodgkin, and P. R. Jefferies	290
Synthesis of Pleurospermine, the Leaf Alkaloid of <i>Cryptocarya pleurosperma</i> White and Francis. By J. W. Loder	296
Alkaloids of the Australian Rutaceae: <i>Evodia xanthoxyloides</i> F. Muell. VI. The Structure of Evodine. By R. H. Prager, E. Ritchie, A. V. Robertson, and W. C. Taylor	301
Some Constituents of <i>Piptocalyx moorei</i> Oliv. By N. V. Riggs and J. D. Stevens	305
Further Constituents of <i>Alphitonia</i> Species. By G. B. Guise, E. Ritchie, and W. C. Taylor.. .. .	314
The Structure of Polygodial: A New Sesquiterpene Dialdehyde from <i>Polygonum hydropiper</i> L. By C. S. Barnes and J. W. Loder	322
Identity of the Alkaloid from <i>Crotalaria damarensis</i> Engl. with (–)-1-Methylenepyrrolizidine, now Shown to Occur Partially Racemized in <i>C. anagyroides</i> H.B. & K. By C. C. J. Culvenor and L. W. Smith	328
Colouring Matters of Australian Plants. IX. Anthraquinones from <i>Morinda</i> Species. By J. H. Bowie and R. G. Cooke	332
Colouring Matters of Australian Plants. X. Anthraquinones from <i>Coelospermum</i> Species. By J. H. Bowie, R. G. Cooke, and P. E. Wilkin	336
The Formation of Sulphonic Acids from the Reaction of Reducing Sugars with Sulphite. By D. L. Ingles	342
Tritium-Hydrogen Exchange in Studies of Protein Structure. By S. J. Leach and P. H. Springell	350
Oxidative Sulphitolysis of the Disulphide Groups in Insulin and Cystine. By S. J. Leach and J. M. Swan	365
<i>Short Communications</i>	
7-Coordinated Transition Complexes in Inorganic Substitution Reactions. By N. S. Hush	378
Dielectric Saturation and Association in Aqueous Thallous Ion Solutions. By M. H. Panckhurst	383
Transformation of Calcium Sulphate Hemihydrate to Insoluble Anhydrite. By D. A. Powell and S. J. Way.. .. .	386
Occurrence of the Sesquiterpenes Polygodial and Guaiol in the Leaves of <i>Drimys lanceolata</i> (Poir.) Baill. By J. W. Loder	389

NUMBER 3, AUGUST 1962

	PAGE
Double-layer Influence on the A.C. Polarographic Behaviour of Zinc(II). By H. H. Bauer and P. B. Goodwin	391
The Kinetics of the System Carbon-Hydrogen-Methane. By J. D. Blackwood	397
Equilibria in Acetic Acid: Ion Association Constants of Salts and the Auto- protolysis Constant of Acetic Acid at 105.7 °C. By R. J. L. Martin ..	409
Electrochemical Studies on Eriochrome Violet B and Its Lanthanide Com- plexes. II. Controlled-potential Coulometric Studies. By T. M. Florence and G. H. Aylward	416
Infrared Spectra of 2,9-Dimethyl-1,10-phenanthroline, Its Hydrates and Acid Perchlorate. By E. C. M. Grigg, J. R. Hall, and R. A. Plowman	425
The Structure of the Nitrocamphor Anhydrides. By H. O. Larson, O. Levand, L. Barnes, and J. N. Shoolery	431
The Thermal Decomposition of Tertiary Butyl Chloride in the Presence of Sulphur Hexafluoride. By R. L. Failes and V. R. Stimson ..	437
The Effect of Residence Time Distribution on the Rate of Advancement of the Reaction. By R. C. L. Bosworth and C. M. Groden	443
The Preparation and Resolution of the Bis-(2,2'-bipyridine)-1,10-phenan- throlinenickel(II) and the Bis-(1,10-phenanthroline)-2,2'-bipyridine- nickel(II) Ions. By J. A. Broomhead and F. P. Dwyer	453
The Extraction of Anionic Beryllium Complexes by Tri-iso-octylamine. By H. J. de Bruin, D. Kairaitis, and R. B. Temple	457
Kinetics and Mechanisms of the Acid-catalysed Hydrolysis of Tertiary Butyl Acetate. By K. R. Adam, I. Lauder, and V. R. Stimson ..	467
Coordination Compounds of Substituted 1,10-Phenanthrolines and Related Dipyridyls. III. Complexes of Copper and 2,9-Dimethyl-1,10-phenan- throline. By J. R. Hall, N. K. Marchant, and R. A. Plowman ..	480
The Chemistry of Quinones. II. Synthesis of Polysubstituted Naphtho- quinones. By R. G. Cooke and W. R. Owen	486
Polarography of Anthraquinone Derivatives in Dimethylformamide: Effect of Hydrogen Bonding. By R. Jones and T. McL. Spotswood ..	492
Degradation of Carbohydrates. III. Unsaturated Hexosones. By E. F. L. J. Anet	503
Studies in Waxes. XXI. The Branched-chain Acids of the Preen Gland Wax of the Goose. By K. E. Murray	510

NUMBER 3, AUGUST 1962 (Continued)

	PAGE
A Diterpene Triol from <i>Beyeria leschenaultii</i> var. <i>drummondii</i> . By P. R. Jefferies, R. S. Rosich, D. E. White, and M. C. Woods	521
The Chemistry of <i>Eremophila</i> Species. IV. Some Flavonoid Constituents. By P. R. Jefferies, J. R. Knox, and E. J. Middleton	532
The Pyrolysis of 1-Phenyltetralin. By J. F. K. Wilshire	538
Alkaloids of <i>Ochrosia poweri</i> Bailey. I. The Leaf-bases. By F. A. Doy and B. P. Moore	548
<i>Short Communications</i>	
The Infrared Spectra of Quaternary 'Onium Cations of Group VB Elements. I. Vibrational Assignments for Some Tetramethylphosphonium Salts. By G. B. Deacon and R. A. Jones	555
Detection of an Anionic Sulphatoberyllium Complex, using a Modified Electrodealytic Tracer Technique. By L. E. Szego and R. B. Temple	559
Position of Bond Fission during Hydrolysis of Diethyl Sulphite in Water under Acidic and Alkaline Conditions. By D. Kerr and I. Lauder	561
Complexes of Palladium(II) and Platinum(II) with 2-Aminomethylpyridine (2-Picolylamine). By G. J. Sutton	563
Potential Constants and Thermodynamic Functions of Tetrafluoromethane. By G. Nagarajan	566
The Physical Constants of <i>p</i> -Nitrophenyl α -D-Galactopyranoside and Its Tetra- <i>O</i> -acetyl Derivative. By M. A. Jermyn	569
Amino Acids and Peptides. IX. Some Unsymmetrical Disulphides derived from Cysteine. By I. W. Stapleton and J. M. Swan	570
Corrigendum	572

NUMBER 4, NOVEMBER 1962

PAGE

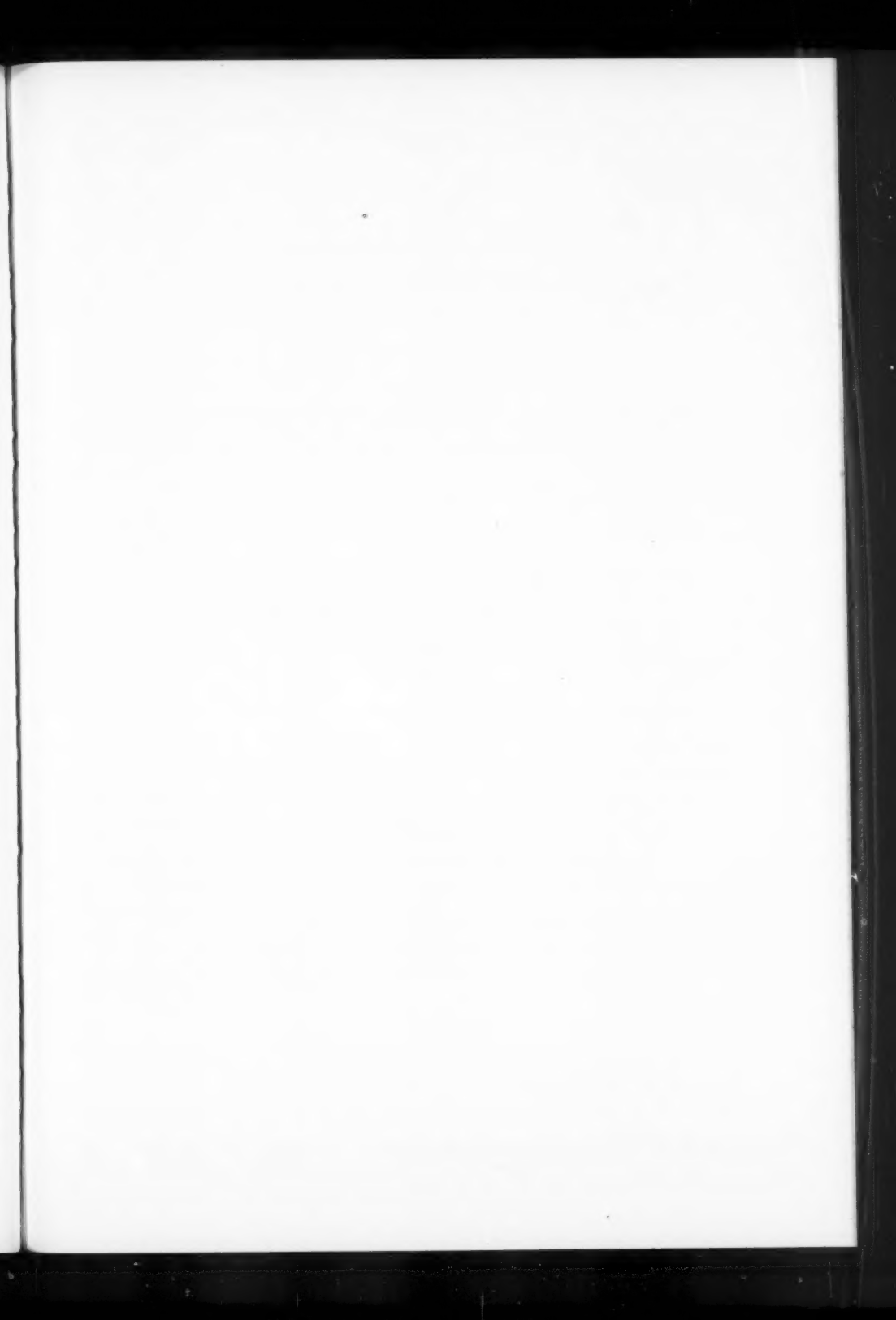
Electronic States of Aromatic Hydrocarbons: The Franck-Condon Principle and Geometries in Excited States. By E. F. McCoy and I. G. Ross	573
Excited States of Aromatic Hydrocarbons: Pathways of Internal Conversion. By G. R. Hunt, E. F. McCoy, and I. G. Ross	591
The Formation of Aromatic Hydrocarbons at High Temperatures. XV. The Pyrolysis of 2,2,4-Trimethylpentane ("iso-octane"). By G. M. Badger, Jillian K. Donnelly, and T. McL. Spotswood	605
The Formation of Aromatic Hydrocarbons at High Temperatures. XVI. The Pyrolysis of [1- ¹⁴ C]Tetralin. By G. M. Badger, R. W. L. Kimber, and J. Novotny	616
Hydrogen Bonding in Organic Compounds. VI. Interaction between Groups in <i>ortho</i> -Substituted Anilines. By A. N. Hambly and B. V. O'Grady	626
The Decay of Irradiation Defects in Polymethyl Methacrylate. By I. D. Campbell and F. D. Looney	642
Semiconducting Polymers Containing Coordinated Metal Ions. By B. A. Bolto and D. E. Weiss	653
Solvolysis of Sulphonyl Halides. III. The Hydrolysis of Methane- and Ethanesulphonyl Chlorides in Aqueous Dioxan and Aqueous Acetone, By Ruby Foon and A. N. Hambly	668
Solvolysis of Sulphonyl Halides. IV. The Hydrolysis of Some Substituted Aliphatic Sulphonyl Chlorides and of Ethanesulphonyl Bromide in Aqueous Dioxan. By Ruby Foon and A. N. Hambly	684
A Force Field for Formaldehyde. By D. E. Freeman and G. R. Hunt	696
The Conformations as Solutes of Diethyl Maleate, Fumarate, and Azodiformate. By R. S. Armstrong, M. J. Aroney, and R. J. W. Le Fèvre	703
The Reactions of Lithium Tetraethylaluminate with Some Halides of Group IV and VB Elements. By R. S. Dickson and B. O. West	710
The Decomposition of Hydrogen Peroxide by Ferric Ion. By V. A. Garten	719
The Behaviour of Lead in Iodide Medium at the Dropping Mercury Electrode. I. D.C. Polarographic Study. By V. S. Srinivasan and A. K. Sundaram	729
The Behaviour of Lead in Iodide Medium at the Dropping Mercury Electrode. II. A.C. Polarographic Study. By V. S. Srinivasan and A. K. Sundaram	734
Direct Measurement of the Thermal Pressure Coefficient of Water. By G. N. Malcolm and G. L. D. Ritchie	740
The Thermal Decomposition of Boron Trimethyl. By A. S. Buchanan and F. Creutzberg	744
Kinetics of Alkyl-oxygen Fission in Ester Hydrolysis. Tertiary Amyl and α -Methylallyl Esters. By G. J. Harvey and V. R. Stimson	757

NUMBER 4, NOVEMBER 1962 (Continued)

	PAGE
Transformation Products of Some 2,6-Diacetoxycyclohexanones. By G. W. K. Cavill and D. H. Solomon	764
Studies in Mass Spectrometry. II. Random Hydrogen Rearrangement in Aromatic Molecular Ions. By C. G. Macdonald and J. S. Shannon ..	771
Metal Complexes of 6-Hydroxymethylpyridine-2-carboxylic Acid. By R. W. Green and G. K. S. Ooi	786
Rearrangements of Benziminazole <i>N</i> -Oxide. By D. J. Kew and P. F. Nelson	792
The Pyrolysis of 2-Phenylethylpyridine. By J. W. Sweeting and J. F. K. Wilshire	800
Quassin. By R. M. Carman and A. D. Ward	807
A Common Acidic Constituent of the Western Australian Rutaceae. By A. M. Duffield, P. R. Jefferies, and P. H. Lucich	812
The Chemical Constituents of Australian <i>Flindersia</i> Species. XVI. The Constituents of the Wood of <i>Flindersia laevis</i> C. T. White & Francis. By G. J. W. Breen, E. Ritchie, and W. C. Taylor	819
The Extent of Reduction of Wool Proteins by Thiols. By J. A. Maclaren ..	824
Investigations of Suint. I. The Composition of the Organic Acids from Fleeces of Different Origin. By C. Kowala, Z. H. Kranz, and K. E. Murray	832
The Interaction of Azo-Dyes with Proteins. II. The Ultraviolet Spectral Changes Occurring on adding Protein to Aqueous Solutions of Methyl Orange. By W. F. Forbes and B. Milligan	841
The Fine Structure of Cytosine. By D. J. Brown and Janice M. Lyall ..	851
5-(10-Pentadecenyl)resorcinol from <i>Grevillea pyramidalis</i> . By J. L. Occolowitz and A. S. Wright	858

Short Communications

Proton Magnetic Resonance Spectra of A_2B_2 Systems. By P. J. Black and M. L. Heffernan	862
Infrared Spectra of Substituted Phenanthrolines in the Out-of-plane CH Deformation Region. By E. C. M. Grigg and J. R. Hall	864
The Use of Diethyl Phosphonate as a Solvent and Catalyst for the Preparation of Arylhydrazones. By Judith A. Maynard	867
Calcium Sulphate Hemihydrate Prepared in Sodium Chloride Solution. By D. A. Powell	868
Faradaic Rectification Study of the Effect of Nonpolar Liquids on the Transfer Coefficient and Kinetics of Redox Processes. By H. P. Agarwal	874
Corrigendum	877
Index to Volume 15	879







INDEX

	PAGE		PAGE
A_2B_2 Systems, Proton Magnetic Resonance Spectra	862	Alkaloids of the Australian Apocynaceae	130
Acetic Acid, Equilibria in ..	409	Alkaloids of the Australian Rutaceae	301
Acetone, Acetonitrile, and Nitromethane Systems, Volume Changes on Mixing	9	Alkaloids of the Gramineae ..	159
Acid-catalysed Hydrolysis of t-Butyl Acetate	467	Alkanes, $\omega\omega'$ -Diphenyl-, Pyrolysis	89
Acidic Constituent of the Western Australian Rutaceae	812	Alkyl-oxygen Fission in Ester Hydrolysis, Kinetics ..	575
A.C. Polarographic Behaviour of Zinc(II), Double-layer Influence	391	<i>Alphitonia</i> Species, Further Constituents of	314
A.C. Polarographic Study ..	734	Amino Acids and Peptides	106, 570
A.C. Polarographic Wave Treatment	13	2-Aminomethylpyridine (2-Picolylamine), Complexes of Chromium(III) and Molybdenum(III) and Palladium(II) and Platinum(II) with	232, 563
A.C. Polarography and Tensammetry, Cathode Ray Oscilloscopy	34	t-Amyl and α -Methylallyl Esters, Fission in Ester Hydrolysis of	575
Adam, K. R., Lauder, I., and Stimson, V. R.—		Anet, E. F. L. J.—	
Kinetics and Mechanisms of the Acid-catalysed Hydrolysis of Tertiary Butyl Acetate	467	Degradation of Carbohydrates. III. Unsaturated Hexosones	503
Alcohol+Benzene Solutions, Volume Changes on Mixing..	1	7-Angelylretronecine and Lati-foline Alkaloids	139
Aldehydes in Microgram Quantities, Characterization ..	163	Anhydrides, Nitrocampbor, The Structure of	431
Aliphatic Sulphonyl Chlorides and Ethanesulphonyl Bromide, Hydrolysis	668	Anhydrite, Insoluble, Transformation of Calcium Sulphate Hemihydrate to	386
Alkaloid from <i>Crotalaria damarensis</i> Engl.	328	Anilines, Interaction between Groups in <i>ortho</i> -Substituted..	626
Alkaloid (Lead) of <i>Cryptocarya pleurosperma</i> White & Francis	296	Anionic Beryllium Complexes, Extraction by Tri-iso-octylamine	457, 559
Alkaloids of <i>Crotalaria trifoli-astrum</i> Willd. and <i>C. aridicola</i> Domin.	121	Anthocyanins, A Procedure for Identification	114
Alkaloids of <i>Cynoglossum latifolium</i> R.Br.	139	Anthraquinone Derivatives in Dimethylformamide, Polarography	492
Alkaloids of <i>Kopsia longifolia</i> Merr., Preliminary Degradation	130	Anthraquinones from <i>Morinda</i> Species and from <i>Coelospermum</i> Species ..	332, 336
Alkaloids of <i>Ochrosia poweri</i> Bailey	548	Argarwal, H. P.—	
		Faradaic Rectification Study of the Effect of Nonpolar Liquids on the Transfer Coefficient and Kinetics of Redox Processes	874

	PAGE		PAGE
Armstrong, R. S., Aroney, M. J., and Le Fèvre, R. J. W.— The Conformations as Solutes of Diethyl Maleate, Fumarate, and Azodiformate	703	Badger, G. M., Kimber, R. W. L., and Novotny, J.— The Formation of Aromatic Hydrocarbons at High Temperatures. XVI. The Pyrolysis of [1- ¹⁴ C]Tetralin	616
Aromatic Hydrocarbons, Elec- tronic States	605	Bagg, J.— The Catalytic Decomposition of Hydrogen Peroxide Solu- tions by Single Crystals of Silver	201
Aromatic Hydrocarbons, Ex- cited States	616	Barnes, C. S., and Loder, J. W.— The Structure of Polygodial: A New Sesquiterpene Di- aldehyde from <i>Polygonum</i> <i>hydropiper</i> L.	322
Aromatic Hydrocarbons, For- mation at High Temperatures	605, 616	Barnes, L.—See Larson, H. O., Levand, O., and Shoolery, J. N.	431
Aromatic Molecular Ions, Random Hydrogen Rearrange- ment in	771	Batten, J. J.— Kinetics of the Reaction be- tween Silver and Nitric Acid	181
Aroney, M. J.—See Armstrong, R. S., and Le Fèvre, R. J. W.	703	Bauer, H. H.— The Reversible A.C. Polaro- graphic Wave at Larger Amplitudes of the Alternat- ing Voltage	13
Arylhydrazones, Diethyl Phos- phonate as Solvent and Catalyst for	867	Bauer, H. H., and Goodwin, P. B.— Double-layer Influence on the A. C. Polarographic Be- haviour of Zinc(II)	391
Association and Dielectric Satu- ration in Aqueous Thallous Ion Solutions	383	Benzene + Alcohol Solutions, Volume Changes on Mixing..	1
Association Constants of Salts, Ion	409	Benzimidazole <i>N</i> -Oxide, Re- arrangements of	792
Association of Thallous Salts in Aqueous Solution	194	Beryllium Complex, Anionic Sulphate, Detection	559
Autoprotolysis Constant of Acetic Acid at 105.7 °C ..	409	Beryllium Complexes, Anionic, Extraction by Tri-iso-octyl- amine	457
Aylward, G. H.—See Florence, T. M.	65, 416	Beryllium, Mono- and Bis- (thenoyltrifluoroacetato), Stability Constants	153
Azodiformate, Conformations as Solutes	703	Beryllium-Salicyclic Acid, pH Titration	218
Azo-dyes, Interaction with Proteins	82, 841	<i>Beyeria leschenaultii</i> , Diterpene Triol	521
<i>Backhousia angustifolia</i> F. Muell., Physiological Forms	168		
Badger, G. M., Donnelly, Jillian K., and Spotswood, T. McL.— The Formation of Aromatic Hydrocarbons at High Temperatures. XV. The Pyrolysis of 2,2,4-Tri- methylpentane ("iso- octane")	605		

	PAGE		PAGE
Biegler, T.—		Bosworth, R. C. L., and Grodin, C. M.—	
Cathode Ray Oscilloscopy in A.C. Polarography and Tensammetry	34	The Effect of Residence Time Distribution on the Rate of Advancement of the Re- action	443
Binding Dyes with Hydroxyl and Sulphonate Substituents to Bovine Serum Albumin..	82	Bottomley, G. A., and Coopes, I. H.—	
Bis-(2,2'-bipyridine)-1,10-phen- anthrolinenickel(II) and the Bis-(1,10-phenanthroline)-2,2'- pyridinenickel(II) Ions, Pre- paration and Resolution ..	453	Virial Coefficients of Three Organic Sulphides.. ..	190
Bis(oxalato)-2,2'-bipyridine- chromate(III) and Bis(oxalato)- 1,10-phenanthrolinechromate- (III) Ions, Preparation and Resolution	228	Bowie, J. H., and Cooke, R. G.—	
Bispyridinium Oximes, Infrared Spectra	150	Colouring Matters of Aust- ralian Plants. IX. Anthra- quinones from <i>Morinda</i> Species	332
Bis(thenoyltrifluoroacetato)- beryllium, Stability Constants	153	Bowie, J. H., Cooke, R. G., and Wilkin, P. E.—	
Black, P. J., and Heffernan, M. L.—		Colouring Matters of Aust- ralian Plants. X. Anthra- quinones from <i>Coelospermum</i> Species	336
Proton Magnetic Resonance Spectra of A_2B_2 Systems..	862	Bowyer, E. C., and Jefferies, P. R.—	
Blackcurrant Fruit, Pigments..	114	New Sources and Synthesis of Torquatone.. ..	145
Blackwood, J. D.—		Breen, G. J. W., Ritchie, E., and Taylor, W. C.—	
The Kinetics of the System Carbon-Hydrogen-Methane	397	The Chemical Constituents of Australian <i>Flindersia</i> Species. XVI. The Con- stituents of the Wood of <i>Flindersia laevis</i> C. T. White & Francis	819
Blumann, A., Della, E. W., Henrick, C. A., Hodgkin, J., and Jefferies, P. R.—		α - Bromo - α' - hydroxy - 1,1- cyclohexane, Ethyl, Di- acetate Lactone, Reaction with Potassium Hydroxide	261
Stereochemistry of Cyclo- hexane Derivatives. VIII. Structures of Some <i>p</i> - Menth-1-ene-3,6-diols ..	290	Broomhead, J. A.—	
Bolto, B. A., and Weiss, D. E.—		The Preparation and Resolu- tion of the Bis(oxalato)-2,2'- bipyridinechromate(III) and Bis(oxalato)-1,10-phenanth- rolinechromate(III) Ions ..	228
Semiconducting Polymers con- taining Coordinated Metal Ions	653	Broomhead, J. A., and Dwyer, F. P.—	
Bond Fission, Position during Hydrolysis of Diethyl Sul- phite in Water	561	The Preparation and Resolu- tion of the Bis-(2,2'-bi- pyridine)-1,10-phenanthro- linenickel(II), and the Bis- (1,10-phenanthroline)-2,2'- bipyridine nickel(II) Ions ..	453
Bonding, Hydrogen, Effect on Polarography	492		
Boron Trimethyl, Thermal De- composition	744		

	PAGE		PAGE
Brown, D. J., and Lyall, Janice M.—		Carbon-Hydrogen-Methane System, Kinetics	397
The Fine Structure of Cytosine	851	2-Carboxylic, 6-Hydroxymethyl- pyridine, Acid, Metal Com- plexes	787
Brown, I., and Smith, F.—		Carman, R. M., and Ward A. D.—	
Volume Changes on Mixing.		Quassin	807
I. Alcohol + Benzene Solu- tions	1	Catalyst (Diethyl Phosphonate) for Arylhydrazone Preparation	867
II. Systems Containing Acetone, Acetonitrile, and Nitromethane ..	9	Cathode Ray Oscilloscopy in A.C. Polarography and Tens- ammetry	34
de Bruin, H. J., Kairaitis, D., and Szego, L.—		Cations, Infrared Spectra of Quaternary 'Onium	555
Solvent Extraction of Mono- (salicylato)beryllium and the pH Titration of the System Beryllium-Salicylic Acid	218	Cavill, G. W. K., and Solomon, D. H.—	
de Bruin, H. J., Kairaitis, D., and Temple, R. B.—		Transformation Products of Some 2,6-Diacetoxycyclo- hexanones	764
The Extraction of Anionic Beryllium Complexes by Tri-iso-octylamine ..	457	Chandler, B. V., and Harper, K. A.—	
de Bruin, H. J., and Temple, R. B.—		A Procedure for the Absolute Identification of Antho- cyanins: The Pigments of Blackcurrant Fruit ..	114
The Stability Constants of Mono- and Bis(thenoyltri- fluoroacetato)beryllium	153	Charge-transfer Complexes of Brominated Polycyclic Aro- matic Hydrocarbons ..	278
Buchanan, A. S., and Creutzberg, F.—		Chlorine Nuclear Quadrupole Resonance Spectra, Deter- mination	21
The Thermal Decomposition of Boron Trimethyl ..	744	Chromate(III) Ions, Bis(oxalato)- 2,2'-bipyridine- and Bis- (oxalato)-1,10-phenanthroline- Preparation and Resolution ..	228
t-Butyl Acetate, Kinetics and Mechanisms	467	Chromium(III) and Molyb- denum(III) with 2-Amino- methylpyridine	232
t-Butyl Chloride, Thermal De- composition in	431	Coefficient (Thermal Pressure) of Water, Direct Measurement	740
Calcium Sulphate Hemihydrate prepared in Sodium Chloride Solution	868	<i>Coelospermum</i> Species, Anthra- quinones	336
Calcium Sulphate Hemihydrate Transformation to Insoluble Anhydrite	386	Colouring Matters in Australian Plants	332, 336
Campbell, I. D., and Looney, F. D.—		Complexes, Anionic Beryllium, Extraction by Tri-iso-octyl- amine	457, 559
The Decay of Irradiation De- fects in Polymethyl Meth- acrylate	642	Complexes, Charge-transfer, of Brominated Polycyclic Aro- matic Hydrocarbons ..	278
Cannon, J. R., and Corbett, Nanette H.—			
Physiological Forms of <i>Back- housia angustifolia</i> F. Muell.	168		
Carbohydrates, Degradation ..	503		

	PAGE		PAGE
Complexes, 7-Coordinated Transition, Inorganic Reactions	378	Coordination Compounds of Substituted 1,10-Phenanthrolines and Related Dipyrindyls	235, 480
Complexes, Eriochrome Violet B, Electrochemical Studies	416	Corbett, Nanette H. — See Cannon, J. R.	168
Complexes, Metal, of 6-Hydroxymethylpyridine-2-carboxylic Acid	787	Coulometric Studies, Controlled-potential	146
Complexes, Nickel(II)	453	Creutzberg, F.—See Buchanan, A. S.	744
Complexes of Chromium(III) and Molybdenum(III) with 2-Aminomethylpyridine	232	Crow, W. D.—Alkaloids of the Gramineae: <i>Thelepogon elegans</i>	159
Complexes of Copper and 2,9-Dimethyl-1,10-phenanthroline	480	Crow, W. D., and Michael, M.—Alkaloids of the Australian Apocynaceae: <i>Kopsia longiflora</i> Merr. III. Preliminary Degradation of the Alkaloids	130
Complexes of Iron and 2,9-Dimethyl-1,10-phenanthroline	235	Crowley, H. C., and Culvenor, C. C. J.—Alkaloids of <i>Cynoglossum latifolium</i> R.Br. Latifoline and 7-Angelylretronecine	139
Complexes of Palladium(II) and Platinum(II) with 2-Aminomethylpyridine	563	Culvenor, C. C. J.— <i>Senecio magnificus</i> F. Muell., A Source of Senecionine	158
Conformations as Solutes of Diethyl Maleate, Fumarate, and Azodiformate	703	See Crowley, H. C.	139
Constant of Acetic Acid	409	Culvenor, C. C. J., and Smith, L. W.—Alkaloids of <i>Crotalaria trifoliastrum</i> Willd. and <i>C. aridicola</i> Domin. I. Methyl Ethers of Supinidine and Retronecine	121
Constants of Mono- and Bis-(thenoyltrifluoroacetato)-beryllium	157	Identity of the Alkaloid from <i>Crotalaria damarensis</i> Engl. with (—)-1-Methylenepyrolizidine now shown to occur Partially Racemized in <i>C. anagyroides</i> H.B. & K.	328
Constants of <i>p</i> -Nitrophenyl α -D-galactopyranoside	569	Culver, R. V., Matthew, I. G., and Spooner, E. C. R.—The Kinetics of the Reduction of Lead Monoxide by Hydrogen	40
Constants of Salts	409	Cyclohexane Derivatives, Stereochemistry	290
Constants of Tetrafluoromethane	566	<i>Cynoglossum latifolium</i> R.Br., Alkaloids	139
Controlled-potential, Coulometric Studies	416		
Conversion, Internal, Pathways of	591		
Cooke, R. G.—See Bowie, J. H.	332		
See Bowie, J. H., and Wilkin, P. E.	336		
Cooke, R. G., and Owen, W. R.—The Chemistry of Quinones. II. Synthesis of Polysubstituted Naphthoquinones	486		
Coopes, I. H.—See Bottomley, G. A.	190		
7-Coordinated Transition Complexes in Inorganic Substitution Reactions	378		

	PAGE		PAGE
Cysteine, Unsymmetrical Disulphides from	570	Diethyl Sulphite, Position of Bond Fission	561
Cystine and Insulin, Sulphitolytic of Disulphide Groups ..	365	Dimethylformamide, Polarography of Anthraquinone Derivatives in	492
L-Cystine Diamide, Synthesis and Properties	106	2,9-Dimethyl-1,10-phenanthroline, Infrared Spectra ..	425
Cytosine, Structure	851	3,6-Diols, <i>p</i> -Menth-1-ene, Structures of Some	290
D.C. Polarographic Study ..	729	$\omega\omega'$ -Diphenylalkanes, Pyrolysis of	89
Deacon, G. B., and Jones, R. A.— The Infrared Spectra of Quaternary 'Onium Cations of Group VB Elements. I. Vibrational Assignments for Some Tetramethylphosphonium Salts	555	Dipyridyls and 1,10-Phenanthrolines Coordination Compounds	235, 480
Decay of Irradiation Defects in Polymethyl Methacrylates ..	642	Disulphides, Unsymmetrical, from Cysteine	570
Decomposition of Boron Trimethyl, Thermal	740	Diterpene Triol from <i>Beyeria leschenaultii</i>	521
Decomposition of Hydrogen Peroxide by Ferric Ion	719	Donnelly, Jillian K. — See Badger, G. M., and Spotswood, T. McL.	605
Decomposition, Thermal, of <i>t</i> -Butyl Chloride in Sulphur Hexachloride	437	Double-layer Influence on Zinc(II) Reduction	391
Deformation Region, Infrared Spectra of Substituted Phenanthrolines	864	Doy, F. A., and Moore, B. P.— Alkaloids of <i>Ochrosia poweri</i> Bailey. I. The Leaf-Bases ..	548
Degradation of Carbohydrates ..	503	<i>Drimys lanccolata</i> (Poir.) Baill., Sesquiterpenes	389
Della, E. W.—See Blumann, A., Henrick, C. A., Hodgkin, J., and Jefferies, P. R.	290	Dropping Mercury Electrode, Lead in Iodide Medium ..	729
Deuterium Exchange Reactions with Substituted Aromatics ..	56	Duffield, A. M., Jefferies, P. R., and Lucich, P. H.— A Common Acidic Constituent of the Western Australian Rutaceae	812
2,6-Diacetoxyhexanones, Transformation Products	765	Dunstone E. A.—See Forss, D. A., Horwood, J. F., and Stark, W.	163
Dickson, R. S., and West, B. O.— The Reactions of Lithium Tetraethylaluminate with Some Halides of Group IV and VB Elements	710	Dwyer, F. P.—See Broomhead, J. A.	453
Dielectric Saturation in Thallous Ion Solutions	383	Dyes (Azo), Binding to Bovine Serum Albumin	82
Diethyl Maleate, Fumarate, and Azodiformate, Conformations ..	642	Dyes (Azo), Interaction with Proteins	82, 841
Diethyl Phosphonate, Solvent and Catalyst	867	Electrochemical Studies on Eriochrome Violet B ..	65, 416

	PAGE		PAGE
Electrode, Dropping Mercury, Lead in Iodide Medium ..	729	Fleischfresser, B. E., and Lauder, I.—	
Electronic States of Aromatic Hydrocarbons	573	Studies on Sulphamic Acid and Related Compounds.	
Elemol, Globulol, and Maaliol in Australian Essential Oils ..	157	I. Kinetics and Mechanism of Hydrolysis of Sul- phamic Acid	242
Equilibria in Acetic Acid ..	409	II. Kinetics and Mechanism of Hydrolysis of Tri- methylamine- and of Triethylamine Sulphur Trioxide Addition Com- pounds	251
<i>Eremophila</i> Species, Chemistry ..	532	<i>Flindersia</i> Species, Chemical Constituents	819
Eriochrome Violet B and Its Lanthanide Complexes ..	416	Florence, T. M., and Aylward, G. H.—	
Essential Oils, Australian, Maaliol, Elemol, and Globulol	157	Electrochemical Studies on Eriochrome Violet B and Its Lanthanide Com- plexes.	
Ethers of Supinidine and Retro- necine	121	I. Behaviour of Eriochrome Violet B and Its Lanthanide Complexes at the Dropping Mercury Electrode: D.C., A.C., and Cathode Ray Polarography	65
<i>Evdia xanthoxyloides</i> F. Muell., Alkaloids	301	II. Controlled-potential Coulometric Studies ..	416
Evodine, Structure	301	Foon, Ruby, and Hambly, A. N.—	
Exchange Reactions, Deuterium, with Substituted Aromatics ..	56	Solvolysis of Sulphonyl Halides.	
Excited States, Franck-Condon Principles	591	III. The Hydrolysis of Methane- and Ethane- sulphonyl Chlorides in Aqueous Dioxan and Aqueous Acetone ..	668
Failes, R. L., and Stimson, V. R.—		IV. The Hydrolysis of Some Substituted Al- phatic Sulphonyl Chlorides and of Ethanesulphonyl Bro- mide in Aqueous Dioxan	684
The Thermal Decomposition of Tertiary Butyl Chloride in the presence of Sulphur Hexafluoride	437		
Faradaic Rectification Study on Transfer Coefficient and Kinetics of Redox Processes	874		
Ferric Ion Decomposition of Hydrogen Peroxide ..	719		
Fission in Ester Hydrolysis, Alkyl-oxygen	757		
Fission, Position of Bond, during Hydrolysis	561		
Flavonoid Constituents of <i>Ere- mophila</i> Species	532		
Fleeces, Organic Acids from ..	833		

	PAGE		PAGE
Forbes, W. F., Harrap, B. S., and Milligan, B.—		Gland Wax of the Goose, Branched-chain Acids ..	510
The Interaction of Azo-dyes with Proteins. I. Binding of Dyes with Hydroxyl and Sulphonate Substituents to Bovine Serum Albumin ..	82	Globulol, Maaliol, and Elemol in Essential Oils ..	157
Forbes, W. F., and Milligan, B.—		Goodwin, P. B.— <i>See</i> Bauer, H. H. ..	391
The Interaction of Azo-dyes with Proteins. II. The Ultraviolet Changes Occur- ring on adding Protein to Aqueous Solutions of Methyl Orange ..	841	Goose Preen Gland Wax, Branched-chain Acids ..	510
Force Field for Formaldehyde ..	696	Green, R. W., and Ooi, G. K. S.— Metal Complexes of 6-Hy- droxymethylpyridine-2-car- boxylic Acid ..	786
Formaldehyde, Force Field ..	696	<i>Grevillea pyramidalis</i> , 5-(10- Pentadecenyl)resorcinol ..	858
Forss, D. A., Dunstone, E. A., Horwood, J. F., and Stark, W.—		Grigg, E. C. M., and Hall, J. R.— Infrared Spectra of Sub- stituted Phenanthrolines in the Out-of-plane CH De- formation Region ..	864
The Characterization of Some Unsaturated Aldehydes in Microgram Quantities ..	163	Grigg, E. C. M., Hall, J. R., and Plowman, R. A.— Infrared Spectra of 2,9-Di- methyl-1,10-phenanthroline, Its Hydrates and Acid Per- chlorates ..	425
Fox, D. B., Hall, J. R., and Plowman, R. A.—		Groden, C. M.— <i>See</i> Bosworth, R. C. L. ..	443
Coordination Compounds of Substituted 1,10-Phenanth- rolines and Related Di- pyridyls. II. Complexes of Iron and 2,9-Dimethyl-1,10- phenanthroline ..	235	Guise, G. B., Ritchie, E., and Taylor, W. C.— Further Constituents of <i>Al- phitonia</i> Species ..	314
Franck-Condon Principles and Geometries in Excited States	573	Hacobian, S.— Evaluation of the Effect of Some Experimental Para- meters in the Determination of Chlorine Nuclear Quad- rupole Resonance Spectra ..	21
Freeman, D. E., and Hunt, G. R.—		Hall, J. R.— <i>See</i> Fox, D. B., and Plowman, R. A. ..	235
A Force Field for Formal- dehyde ..	696	<i>See</i> Grigg, E. C. M. ...	864
Fruit, Blackcurrant, Pigments ..	114	<i>See</i> Grigg, E. C. M., and Plowman, R. A. ..	425
Fumarate and Azodiformate, Conformations ..	703	Hall, J. R., Marchant, N. K., and Plowman, R. A.— Coordination Compounds of Substituted 1,10-Phenanth- rolines and Related Di- pyridyls. III. Complexes of Copper and 2,9-Dimethyl- 1,10-phenanthroline ..	480
Garnett, J. L., and Sollich, W. A.—			
Deuterium Exchange Re- actions with Substituted Aromatics. III. Hetero- cyclics and Polycyclic Hydrocarbons ..	56		
Garten, V. A.—			
The Decomposition of Hydrogen Peroxide by Ferric Ion ..	719		

PAGE	PAGE
Hambly, A. N.— <i>See</i> Foon, Ruby 668, 684	Hydrocarbons, Brominated Polycyclic Aromatic .. 278
Hambly, A. N., and O'Grady, B. V.—	Hydrocarbons, Heterocyclic and Polycyclic .. 56
Hydrogen Bonding in Organic Compounds. VI. Interaction between Groups in <i>ortho</i> -Substituted Anilines .. 626	Hydrogen Bonding Effect on Polarography of Anthraquinone Derivatives .. 492
Harper, K. A.— <i>See</i> Chandler, B. V. 114	Hydrogen Bonding in Organic Compounds 626
Harrap, B. S.— <i>See</i> Forbes, W. F., and Milligan, B. .. 82	Hydrogen-Carbon-Methane, Kinetics of the System .. 397
Harvey, G. J., and Stimson, V. R.—	Hydrogen Peroxide, Decomposition 719
Kinetics of Alkyl-oxygen Fission in Ester Hydrolysis. Tertiary Amyl and α -Methylallyl Esters 757	Hydrogen Peroxide Solutions, Catalytic Decomposition by Single Crystals of Silver .. 201
Heffernan, M. L.— <i>See</i> Black, P. J. 862	Hydrogen Rearrangement in Aromatic Molecular Ions .. 771
Hellyer, R. O.—	Hydrogen Reduction of Lead Monoxide 40
Occurrence of Maaliol, Elemol, and Globulol in Some Australian Essential Oils .. 157	Hydrolysis of Acid-catalysed <i>t</i> -Butyl Acetate 467
Hemihydrate, Calcium Sulphate, Preparation 868	Hydrolysis of Diethyl Sulphite in Water, Position of Bond Fission during 561
Henrick, C. A.— <i>See</i> Blumann, A., Della, E. W., Hodgkin, J., and Jefferies, P. R. .. 290	Hydrolysis of Methane and Ethanesulphonyl Chlorides in Dioxan 668
Hexosones, Unsaturated .. 503	Hydrolysis of Substituted Aliphatic Sulphonyl Chlorides in Dioxan 684
Hodgkin, J.— <i>See</i> Blumann, A., Della, E. W., Henrick, C. A., and Jefferies, P. R. .. 290	Hydrolysis of Sulphamic Acid .. 242
Horwood, J. F.— <i>See</i> Forss, D. A., Dunstone, E. A., and Stark, W. 163	Hydrolysis of Sulphur Trioxide Addition Compounds .. 251
Hunt, G. R.— <i>See</i> Freeman, D. E. 696	Hydrolysis of Tertiary Amyl and α -Methylallyl Esters.... 757
Hunt, G. R., McCoy, E. F., and Ross, I. G.—	<i>o</i> -, <i>m</i> -, <i>p</i> -Hydroxybenzyl Alcohols, Structures and Reactions.. .. 265
Excited States of Aromatic Hydrocarbons: Pathways of Internal Conversion .. 591	6-Hydroxymethylpyridine-2-carboxylic Acid, Metal Complexes 787
Hush, N. S.—	Infrared Spectra of Bispyridinium Oximes 150
7-Coordinated Transition Complexes in Inorganic Substitution Reactions .. 378	Infrared Spectra of 2,9-Dimethyl-1,10-phenanthroline, Hydrates and Acid Perchlorates 425
Hydrocarbons, Aromatic, Electronic and Excited States 573, 591	
Hydrocarbons, Aromatic, Formation 605	

	PAGE		PAGE
Infrared Spectra of Quaternary Onium Cations of Group VB Elements	555	Jefferies, P. R., Rosich, R. S., White, D. E., and Woods, M.C.—	
Infrared Spectra of Substituted Phenanthrolines in the Out- of-plane CH Deformation Region	864	A Diterpene Triol from <i>Beyeria leschenaultii</i> var. <i>drummondii</i>	521
Ingles, D. L.—		Jermyn, M. A.—	
The Formation of Sulphonic Acids from the Reaction of Reducing Sugars with Sul- phite	342	The Physical Constants of <i>p</i> -Nitrophenyl α -D-Galacto- pyranoside and Its Tetra- O-acetyl Derivatives	569
Inorganic Complexes, Studies in 232, 563		Jones, R., and Spotswood, T. McL.—	
Insulin and Cystine, Sulphito- lysis of Disulphide Groups in	365	Polarography of Anthra- quinone Derivatives in Di- methylformamide: Effect of Hydrogen Bonding	492
Internal Conversion, Pathways of	591	Jones, R. A.—See Deacon, G. B.	555
Iodide Medium, Lead in	729	Kairaitis, D.—	
Ion Association Constants of Salts	409	See de Bruin, H. J., and Szego, L.	218
Ion Solutions, Aqueous Thallous	383	See de Bruin, H. J., and Temple, R. B.	457
Ions, Aromatic Molecular, Random Hydrogen Rearrange- ment in	771	Kerr, D., and Lauder, I.—	
Ions, Coordinated Metal, in Semiconducting Polymers	653	Position of Bond Fission during Hydrolysis of Di- ethyl Sulphite in Water under Acidic and Alkaline Conditions	561
Ions from Benzyl Alcohol, Structures and Reactions of	265	Kew, D. J., and Nelson, P. F.—	
Ions, Nickel(II)	453	Rearrangements of Benz- iminazole <i>N</i> -Oxide	792
Iron and 2,9-Dimethyl-1,10- phenanthroline Complexes	235	Kimber, R. W. L.—See Badger, G. M., and Novotny, J.	616
Irradiation Defects in Poly- methyl Methacrylates	642	Kinetics and Mechanism of Hydrolysis of Sulphamic Acid	242
Jefferies, P. R.—		Kinetics and Mechanism of Hydrolysis of Trimethylamine- and of Triethylamine Sulphur Trioxide Addition Compounds	251
See Blumann, A., Della, E. W., Henrick, C. A., and Hodgkin, J.	290	Kinetics and Mechanisms of t-Butyl Acetate	467
See Bowyer, R. C.	145	Kinetics of Alkyl-oxygen Fission in Ester Hydrolysis	757
See Duffield, A. M., and Lucich, P. H.	812	Kinetics of the Decomposition of Sulphur Dicyanide in Aqueous Solution	211
Jefferies, P. R., Knox, J. R., and Middleton, E. J.—			
The Chemistry of <i>Eremophila</i> Species. IV. Some Flavonoid Constituents	532		

	PAGE		PAGE
Kinetics of the Reaction between Silver and Nitric Acid	181	Lauder, I.— See Adam, K. R., and Stimson, V. R.	467
Kinetics of the Reduction of Lead Monoxide by Hydrogen	40	See Fleischfresser, B. E.	242, 251
Kinetics of the System Carbon- Hydrogen-Methane	397	See Kerr, D.	561
Kitching, W., Smith, R. H., and Wilson, I. R.— Kinetics of the Decomposition of Sulphur Dicyanide in Aqueous Solution	211	Leach, S. J., and Springell, P. H.— Tritium-Hydrogen Exchange in Studies of Protein Structure	350
Knox, J. R.—See Jefferies, P. R., and Middleton, E. J.	532	Leach, S. J., and Swan, J. M.— Oxidative Sulphitolytic of the Disulphide Groups in In- sulin and Cystine	365
<i>Kopsia longifolia</i> Merr., Alkaloids of	130	Lead in Iodide Medium at the D.M.E., Behaviour	729, 734
Kowala, C., Kranz, Z. H., and Murray, K. E.— Investigations of Saint. I. The Composition of the Organic Acids from Fleeces of Different Origin	832	Lead Monoxide, Reduction by Hydrogen	40
Kranz, Z. H.—See Kowala, C., and Murray, K. E.	832	Le Fèvre, R. J. W.—See Arm- strong, R. S., and Aroney, M. J.	703
Lactone, Ethyl α -Bromo- α' - hydroxy-1,1-cyclohexane Di- acetate, Reaction with Potas- sium Hydroxide	261	Levand, O.—See Larson, H. O., Barnes, L., and Shoolery, J. N.	431
Lanthanide Complexes, Electro- chemical Studies	65, 416	Ligands, Interaction with Halogen-bridged Anionic Complexes of Bivalent Platinum and Palladium ..	175
Larson, H. O., Levand, O., Barnes, L., and Shoolery, J. N.— The Structure of the Nitro- camphor Anhydrides	431	Liquids, Nonpolar, Effect on Transfer Coefficient and Kinetics of Redox Processes ..	874
Larson, H. O., and Sung, Gaylien, S. K.— A Study of the Thorpe-Ingold Effect: The Reaction of Potassium Hydroxide with a Lactone of Ethyl α -Bromo- α' -hydroxy-1,1-cyclohexane Diacetate	261	Lirioresinol-B, Stereochemistry	161
Latifoline and 7-Angelylretro- necine, Alkaloids	139	Lithium Tetraethylaluminate, Reaction with Some Halides of Group IV and VB Elements	710
		Livingstone, S. E., and Whitley, Alice— The Interaction of Various Ligands with Halogen- bridged Anionic Complexes of Bivalent Platinum and Palladium	175

	PAGE		PAGE
Loder, J. W.—		Martin, R. J. L.—	
Occurrence of the Sesqui- terpenes, Polygodial and Guaiol in the Leaves of <i>Drimys lanceolata</i> (Poir.) Baill.	389	Equilibria in Acetic Acid: Ion Association Constants of Salts and the Autoprotolysis Constant of Acetic Acid at 105.7 °C	409
Synthesis of Pleurospermine, the Lead Alkaloid of <i>Cryptocarya pleurosperma</i> White & Francis	296	Maslen, E. N., Nockolds, C., and Paton, M.—	
See Barnes, C. S.	322	The Stereochemistry of Lirioresinol-B	161
Looney, F. D.—See Campbell, I. D.	642	Mass Spectrometry, Studies . . .	265, 771
Lucich, P. H.—See Duffield, A. M., and Jefferies, P. R. . .	812	Matthew, I. G.—See Culver, R. V., and Spooner, E. C. R. .	40
Lyall, Janice M.—See Brown, D. J.	851	Maynard, Judith A.—	
Maaliol, Elemol, and Globulol in Australian Essential Oils . .	157	The Use of Diethyl Phos- phonate as a Solvent and Catalyst for the Preparation of Arylhydrazones	867
Macdonald, C. G., and Shannon, J. S.—		<i>p</i> -Menth-1-ene-3,6-diols, Struc- tures	290
Studies in Mass Spectro- metry. II. Random Hy- drogen Rearrangement in Aromatic Molecular Ions . . .	771	Mercury Electrode, Dropping, Lead in Iodide Medium at the 729, 734	
Maclaren, J. A.—		Metal Complexes of 6-Hydroxy- methylpyridine-2-carboxylic Acid	787
The Extent of Reduction of Wool Proteins by Thiols . .	824	Metal Ions, Coordinated	653
McCoy, E. F., and Ross, I. G.—		Methacrylates, Polymethyl, Decay of Irradiation Defects .	642
Electronic States of Aromatic Hydrocarbons: The Franck-Condon Principle and Geometries in Excited States	573	Methane- and Ethanesulphonyl Chlorides in Dioxan and Acetone, Hydrolysis of . . .	668
McCoy, E. F.—See Hunt, G. R., and Ross, I. G.	591	Methane-Carbon-Hydrogen, Kinetics of the System . . .	397
Magnetic Resonance Spectra of A_2B_2 Systems, Proton . . .	862	Methyl Orange, Spectral Changes when Protein added to . . .	841
Malcolm, G. N., and Ritchie, G. L. D.—		Michael, M.—See Crow, W. D. .	130
Direct Measurement of the Thermal Pressure Coefficient of Water	740	Middleton, E. J.—See Jefferies, P. R., and Knox, J. R. . . .	532
Marchant, N. K.—See Hall, J. R., and Plowman, R. A. . .	480	Milligan, B.—	
		See Forbes, W. F.	841
		See Forbes, W. F., and Harrap, B. S.	82
		Molecular Ions, Aromatic, Random Hydrogen Rearrange- ment in	771
		Molybdenum(III) Complexes with 2-Aminomethylpyridine .	232
		Mono(salicylato)beryllium, Sol- vent Extraction of	218

	PAGE		PAGE
Moore, B. P.— <i>See</i> Doy, F. A. . .	548	Organic Acid Composition, from	
<i>Morinda</i> , Species, Anthra-		Fleeces of Different Origin . .	832
quinones from	332	Oscilloscopy, Cathode Ray . .	34
Murray, K. E.—		Owen, W. R.— <i>See</i> Cooke, R. G.	486
Studies in Waxes. XXI. The		Oxidative Sulphitolytic of Di-	
Branched-chain Acids of		sulphide Groups in Insulin	
the Preen Gland Wax of		and Cystine	365
the Goose	510	Oximes of Bispyridinium, Infra-	
<i>See</i> Kowala, C., and Kranz,		red Spectra	150
Z. H.	832	Oxygen Fission, Alkyl-, Ester	
Nagarajan, G.—		Hydrolysis	757
Potential Constants and Ther-		Palladium and Platinum, Inter-	
modynamic Functions of		action of Ligands with Com-	
Tetrafluoromethane . .	566	plexes	175
Naphthoquinones, Synthesis of		Palladium(II) Complex with	
Polysubstituted	486	2-Aminomethylpyridine . .	563
Nelson, P. F.— <i>See</i> Kew, D. J. . .	792	Panckhurst, M. H.—	
Nickel(II) Ions, Bis-(2,2'-bi-		Dielectric Saturation and As-	
pyridine)-1,10-phenanthroline-		sociation in Aqueous Thal-	
and Bis-(1,10-phenanthroline)-		lous Ion Solutions . .	383
2,2'-bipyridine, Preparation		The "Anomalous" Associa-	
and Resolution	453	tion of Thallous Salts in	
Nitrocamphor Anhydrides,		Aqueous Solution . .	194
Structure	431	Park, R. J., and Sutherland,	
Nitromethane, Acetone, Aceto-		M. D.—	
nitrile Systems, Volume		Volatile Constituents of the	
Changes on Mixing	9	Bronze Orange Bug, <i>Rhoeco-</i>	
<i>p</i> -Nitrophenyl α -D-Galacto-		coris sulciventris	172
pyranoside and Its Tetra- <i>O</i> -		Paton, M.— <i>See</i> Maslen, E. N.,	
acetyl Derivatives	569	and Nockolds, C. . . .	161
Nockolds, C.— <i>See</i> Maslen, E. N.,		Peptides and Amino Acids 106, 570	
and Paton, M. . . .	161	Perchlorate and Hydrates of	
Novotny, J.— <i>See</i> Badger, G. M.,		2,9-Dimethyl-1,10-phenan-	
and Kimber, R. W. L. . .	616	throline, Infrared Spectra . .	425
Nuclear Resonance Quadrupole		1,10-Phenanthrolines and Re-	
Spectra Determination . .	21	lated Dipyriddyis, Coordination	
Occolowitz, J. L., and Wright,		Compounds	235, 480
A. S.—		Phenanthrolines, Substituted,	
5 - (10 - Pentadecenyl)resore-		Infrared Spectra	864
inol from <i>Grevillea pyra-</i>		2-Phenylethylpyridine, Pyrolysis	
midalis	858	1-Phenyltetralin, Pyrolysis . .	538
<i>Ochrosia poweri</i> Bailey, Alkaloids	548	Phosphonate, Diethyl, Solvent	
O'Grady, B. V.— <i>See</i> Hambly,		and Catalyst for Aryl-	
A. N.	626	hydrazones	867
Oils, Occurrence of Maaliol,		Physiological Forms of <i>Back-</i>	
Elemol, and Globulol . .	157	<i>housia angustifolia</i> F. Muell. . .	168
Ooi, G. K. S.— <i>See</i> Green, R. W.	786	Pigments of Blackcurrant Fruit	114
		<i>Piptocayla moorei</i> Oliv., Con-	
		stituents	303

	PAGE		PAGE
Platinum and Palladium, Inter- action of Ligands with Anionic Complexes of Bivalent ..	175	Protein Added to Methyl Orange, Spectral Changes	841
Platinum(II) Complex with 2-Aminomethylpyridine ..	563	Protein Structure, Tritium- Hydrogen Exchange ..	350
Pleurosperrmine, Synthesis ..	296	Proteins, Interaction of Azo- dyes with	82, 841
Plowman, R. A.—		Proteins, Wool, Reduction by Thiols	824
<i>See</i> Fox, D. B., and Hall, J. R.	235	Proton Magnetic Resonance Spectra of A_2B_2 Systems ..	862
<i>See</i> Grigg, E. C. M., and Hall, J. R.	425	Pyrolysis of $\omega\omega'$ -Diphenyl- alkanes	89
<i>See</i> Hall, J. R., and Marchant, N. K.	480	Pyrolysis of 2-Phenylethyl- pyridine	800
Polarographic Behaviour of Zinc(II), Double-layer In- fluence	391	Pyrolysis of 1-Phenyltetralin ..	538
Polarographic Wave at Larger Amplitudes of Alternating Voltage	13	Pyrolysis of [1- ^{14}C]Tetralin ..	616
Polarography of Anthraquinone Derivatives in Dimethylform- amide	492	Pyrolysis of 2,2,4-Trimethyl- pentane (iso-octane) ..	605
Polygodial and Guaiol in the Leaves of <i>Drimys lanceolata</i> (Poir.) Baill.	389	Quassin	807
Polygodial, Structure ..	322	Quaternary 'Onium Cations of Group VB Elements, Infrared Spectra	555
<i>Polygonum hydropiper</i> L., New Sesquiterpene Dialdehyde ..	322	Quinones, Chemistry	486
Polymers, Semiconducting ..	653	Rate of Advancement of the Reaction, Residence Time Distribution	443
Potassium Hydroxide Reaction with a Lactone of Ethyl α -Bromo- α' -hydroxy-1,1- cyclohexane Diacetate ..	261	Rearrangement, Random Hydrogen, in Aromatic Molecular Ions	771
Powell, D. A.—		Rearrangements of Benzimin- azole <i>N</i> -Oxide	792
Calcium Sulphate Hemi- hydrate prepared in Sodium Chloride Solution	868	Redox Processes, Kinetics of ..	874
Powell, D. A., and Way, S. J.—		Reduction of Wool Proteins by Thiols	824
Transformation of Calcium Sulphate Hemihydrate to Insoluble Anhydrite ..	386	Residence Time Distribution Effect on Reaction Rate ..	443
Prager, R. H., Ritchie, E., Robertson, A. V., and Taylor, W. C.—		Resonance Spectra, Determina- tion	21
Alkaloids of the Australian Rutaceae: <i>Evodia xantho-</i> <i>oxyloides</i> F. Muell. VI. The Structure of Evodine ..	301	Resonance Spectra of A_2B_2 Systems	862
Preen Gland Wax of Goose, Branched-chain Acids ..	510	Resorcinol, 5-(10-Pentadecenyl), from <i>Grevillea pyramidalis</i> ..	858
		Retronecine and Supinidine, Ethers	121
		Reversible A.C. Polarographic Wave	13
		<i>Rhoccocoris sulciventris</i> , Bronze Orange Bug, Constituents ..	172

	PAGE		PAGE
Riggs, N. V., and Stevens, J. D.— Some Constituents of <i>Piptocalyx moorei</i> Oliv.	305	Silver (Single Crystals), De- composition of Hydrogen Per- oxide	201
Ritchie, E.— See Breen, G. J. W., and Taylor, W. C.	819	Smith, F.—See Brown, I.	1, 9
See Guise, G. B., and Taylor, W. C.	314	Smith, L. W.—See Culvenor, C. C. J.	121, 328
See Prager, R. H., Robertson, A. V., and Taylor, W. C.	301	Smith, R. H.—See Kitching, W., and Wilson, I. R.	211
Ritchie, G. L. D.—See Malcolm, G. N.	740	Sollich, W. A.—See Garnett, J. L.	56
Robertson, A. V.—See Prager, R. H., Ritchie, E., and Taylor, W. C.	301	Solomon, D. H.—See Cavill, G. W. K.	764
Rosich, R. S.—See Jefferies, P. R., White, D. E., and Woods, M. C.	521	Solvolytic of Sulphonyl Halides 668, 684	
Ross, I. G.— See Hunt, G. R., and McCoy, E. F.	591	Spectra, Chlorine Nuclear Quadrupole Resonance	21
See McCoy, E. F.	573	Spectra of A_2B_2 Systems, Proton Magnetic Resonance	862
Rutaceae (Western Australian), Acidic Constituent	812	Spectra of Bispyridinium Oximes, Infrared	150
Saturation, Dielectric, In Thal- lous Ion Solutions	383	Spectra of 2,9-Dimethyl-1,10- phenanthrolines, Infrared	425
<i>Senecio magnificus</i> , F. Muell., Source of Senecionine	158	Spectra of Group VB Elements, Infrared	555
Sesquiterpene Dialdehyde (New) from <i>Polygonum hydropiper</i> L.	322	Spectral Changes on adding Protein to Methyl Orange	841
Sesquiterpenes, Polygodial and Guaiol in <i>Drimys lanceolata</i> (Poir.) Baill.	389	Spectrometry, Studies in Mass 265, 771	
Shannon, J. S.— Studies in Mass Spectrometry. I. Structures and Reactions of Ions from Benzyl Alcohol, <i>ortho</i> -, <i>meta</i> -, and <i>para</i> - Hydroxybenzyl Alcohols, and their <i>O</i> -Deuterated De- rivatives	265	Spooner, E. C. R.—See Culver, R. V., and Matthew, I. G.	40
Shannon, J. S.—See Macdonald, C. G.	771	Spotswood, T. McL.— Charge-transfer Complexes of Brominated Polycyclic Aromatic Hydrocarbons	278
Shoolery, J. N.—See Larson, H. O., Barnes, L., and Levand, O.	431	See Badger, G. M., and Donnelly, Jillian K.	605
Silver and Nitric Acid, Reaction	181	See Jones, R.	492
		Springell, P. H.—See Leach, S. J.	350
		Srinivasan, V. S., and Sun- daram, A. K.— The Behaviour of Lead in Iodide Medium at the Dropping Mercury Elec- trode. I. D.C. Polarographic Study	729
		II. A.C. Polarographic Study	734

	PAGE		PAGE
Stability Constants of Mono- and Bis(thenoyltrifluoroacetato)beryllium ..	153	Sulphur Hexafluoride, Thermal Decomposition of <i>t</i> -Butyl Chloride in ..	437
Stapleton, I. W., and Swan, J. M.—		Sulphur Trioxide Addition Compounds ..	251
Amino Acids and Peptides.		Sundaram, A. K.— <i>See</i> Srinivasan, V. S. ..	729, 734
VIII. The Synthesis and Some Properties of L-Cystine Diamide ..	106	Sung, Gaylien S. K.— <i>See</i> Larson, H. O. ..	261
IX. Some Unsymmetrical Disulphides derived from Cysteine ..	570	Supinidine and Retronecine, Ethers ..	121
Stark, W.— <i>See</i> Forss, D. A., Dunstone, E. A., and Horwood, J. F. ..	163	Sutherland, M. D.— <i>See</i> Park, R. J. ..	172
Stereochemistry of Cyclohexane Derivatives ..	290	Sutton, G. J.—	
Stereochemistry of Lirioresinol-B	161	Some Studies in Inorganic Complexes.	
Stevens, J. D.— <i>See</i> Riggs, N. V.	305	XIII. Chronium(III) and Molybdenum(III) with 2-Aminomethylpyridine(2-Picolylamine) ..	232
Stimson, V. R.—		Complexes of Palladium(II) and Platinum(II) with 2-Aminomethylpyridine(2-Picolylamine) ..	563
<i>See</i> Adam, K. R., and Lauder, I. ..	467	Swan, J. M.—	
<i>See</i> Failes, R. L. ..	437	<i>See</i> Leach, S. J. ..	365
<i>See</i> Harvey, G. J. ..	757	<i>See</i> Stapleton, I. W.	106, 570
Structure of Cytosine ..	851	Sweeting, J. W., and Wilshire, J. F. K.—	
Structure of Nitrocamphor Anhydrides ..	431	The Pyrolysis of $\omega\omega'$ -Diphenylalkanes ..	89
Structures and Reactions of Ions from Benzyl Alcohol, <i>o</i> -, <i>m</i> -, and <i>p</i> -Hydroxybenzyl Alcohols, and their <i>O</i> -Deuterated Derivatives ..	265	The Pyrolysis of 2-Phenylethylpyridine ..	800
Sugars treated with Sulphite, Sulphonic Acids from ..	342	Synthesis and Some Properties of L-Cystine Diamide ..	106
Suint, Investigations ..	832	Szego, L.— <i>See</i> de Bruin, H. J., and Kairaitis, D. ..	218
Sulphamic Acid and Related Complexes, Studies ..	242, 251	Szego, L., and Temple, R. B.—	
Sulphatoberyllium Complex, Anionic ..	559	Detection of an Anionic Sulphatoberyllium Complex	559
Sulphides, Virial Coefficients of Organic ..	190	Taylor, W. C.—	
Sulphitolysis of Disulphide Groups in Insulin and Cystine	365	<i>See</i> Breen, G. J. W., and Ritchie, E. ..	819
Sulphonic Acids from reducing Sugars with Sulphite ..	342	<i>See</i> Guise, D. B., and Ritchie, E. ..	314
Sulphonyl Halides, Solvolysis	668, 684	<i>See</i> Prager, R. H., Ritchie, E., and Robertson, A. V. ..	301
Sulphur Dicyanide, Kinetics ..	211		

	PAGE		PAGE
Temple, R. B.—		Triol, Diterpene	521
<i>See</i> de Bruin, H. J. ..	153	Tritium-Hydrogen Exchange in	
<i>See</i> de Bruin, H. J., and		Protein Structure	350
Kairaitis, D.	457	Ultraviolet Spectral Changes,	
<i>See</i> Szego, L.	559	Adding Protein to Methyl	
Tensammetry and A.C. Polarography, Cathode Ray Oscilloscopy	34	Orange	841
Tetrafluoromethane, Potential Constants and Thermodynamic Functions	566	Vibrational Assignments for Tetramethylphosphonium Salts	555
[1- ¹⁴ C]Tetralin, Pyrolysis ..	616	Virial Coefficients of Organic Sulphides	190
Tetramethylphosphonium Salts, Vibrational Assignments for	555	Volatile Constituents of the Bronze Orange Bug, <i>Rhoecocoris sulciventris</i>	172
Thallous Ion Solutions, Dielectric Saturation	383	Volume Changes on Mixing ..	1, 9
Thallous Salts, "Anomalous" Association of	194	Ward, A. D.— <i>See</i> Carman, R. M.	807
<i>Thelepogon elegans</i> , Alkaloids ..	159	Water, Thermal Pressure Coefficient	740
Thermal Decomposition of Boron Trimethyl	744	Wave Treatment, Reversible A.C.	13
Thermal Decomposition of t-Butyl Chloride in Sulphur Hexafluoride	437	Wax of the Goose, Branched-chain Acids	510
Thermal Pressure Coefficient of Water, Direct Measurement ..	740	Waxes, Studies in	510
Thiols, Reduction of Wool Proteins	824	Way, S. J.— <i>See</i> Powell, D. A.	336
Thorpe-Ingold Effect, Study ..	261	Weiss, D. E.— <i>See</i> Bolto, B. A.	653
Torquatone, New Sources and Synthesis	145	West, B. O.— <i>See</i> Dickson, R. S.	710
Tracer Technique for Detection of Anionic Sulphatoberyllium Complex	559	White, D. E.— <i>See</i> Jefferies, P. R., Rosich, R. S., and Woods, M. C.	521
Transfer Coefficients and Kinetics of Redox Processes, Effect of Nonpolar Liquids ..	874	Whitley, Alice— <i>See</i> Livingstone, S. E.	175
Transformation of Calcium Sulphate Hemihydrate to Insoluble Anhydrite	386	Wilkin, P. E.— <i>See</i> Bowie, J. H., and Cooke, R. G.	336
Transformation Products of 2,6-Diacetoxycyclohexanones ..	764	Wilshire, J. F. K.—	
Tregellas-Williams, J.—		The Pyrolysis of 1-Phenyltetralin	538
The Infrared Spectra of Bispyridinium Oximes ..	150	<i>See</i> Sweeting, J. W. ..	89, 800
Tri-iso-octylamine, Extraction of Beryllium Complexes ..	457	Wilson, I. R.— <i>See</i> Kitching, W., and Smith, R. H.	211
2,2,4-Trimethylpentane(iso-octane), Pyrolysis	605	Wood of <i>Flindersia laevicarpa</i> , Constituents	819
		Woods, M. C.— <i>See</i> Jefferies, P. R., Rosich, R. S., and White, D. E.	521
		Wool Proteins, Thiol Reduction ..	824
		Wright, A. S.— <i>See</i> Occolowitz, J. L.	858
		Zinc(II), A.C. Behaviour ..	391